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TRAINING PROCEDURE FOR USERS OF RADIATION PRODUCING DEVICES AND/OR RADIOACTIVE MATERIALS

This document provides users of radiation producing devices and/or radioactive materials information on how to complete required Laboratory training modules.

1.0 APPROVAL RECORD

- Reviewed by: Document Control Coordinator (Hiliary Burns)
- Approved by: Radiation Safety Officer (Mike McGuigan)
- Approved by: Training Coordinator (Hiliary Burns)
- Approved by: Manager, ESH&A (Sean Whalen)
- Approved by: Deputy Director (Tom Lograsso)

The official approval record for this document is maintained in the Training and Documents Office, 105 TASF.

2.0 REVISION/REVIEW INFORMATION

The revision description for this document is available from and maintained by the author.

3.0 PURPOSE AND SCOPE

The U.S. Department of Energy (DOE) has established regulatory requirements for occupational radiation protection in Title 10, Part 835 of the Code of Federal Regulations, (10 CFR 835), "Occupational Radiation Protection". Iowa State University is the contractor for the activities associated with Ames Laboratory (Ames) and is responsible for compliance with the requirements of 10 CFR 835. Ames follows the rules established in 10 CFR 835 through a documented Radiation Protection Program (RPP) as approved by DOE. Ames has promulgated those rules in this Radiological Safety Program Description (RSPD), along with Environment, Safety, Health, and Assurance (ESH&A) Manual, and Health Physics procedures, as applicable.

As part of this order, Ames Laboratory is required to train all employees who work with X-ray devices and radioactive materials about the known risks and proper implementation of all safety protocols in order to keep doses of radiation As Low As Reasonably Achievable (ALARA). Specifically, Ames Laboratory must meet in the requirements for radiation safety training as outlined in 10 CFR 835 Subpart J. These requirements include:

- Each individual shall complete radiation safety training on the topics established at 835.9019(c) commensurate with the hazards in the area and the required controls before being permitted unescorted access to controlled areas and before receiving occupational dose during access to controlled areas at a DOE site or facility.
- Each individual shall demonstrate knowledge of the radiation safety training topics established in 835.901(c), commensurate with the hazards in the area and required controls, by successful completion of an examination and performance demonstrations before being permitted unescorted access to radiological areas and before performing unescorted assignments as a radiological worker.
- Radiation safety training shall include the following topics, to the extent appropriate to each individual's prior training, work assignments, and degree of exposure to potential radiological hazards:
    - Risks of exposure to radiation and radioactive materials, including prenatal radiation exposure
    - Basic radiological fundamentals and radiation protection concepts

- Physical design features, administrative controls, limits, policies, procedures, alarms and other measures implemented at the facility to manage doses and maintain doses ALARA, including both routine and emergency actions
- Individual rights and responsibilities for implementing ALARA measures required by 835.101
- Individual exposure reports that may be requested in accordance with 835.801

- When an escort is used in lieu of training in accordance with this section, the escort shall have completed radiation safety training, examinations, and performance demonstrations required for entry to the area and performance of the work and ensure that all escorted individuals comply with the document radiation protection program.
- Radiation safety training shall be provided to individuals when there is a significant change to radiation protection policies and procedures that may affect the individual and at intervals not to exceed 24 months. Such training provided for individual subject to the requirements of 835.901(b)(1) and (b)(2) shall include successful completion of an examination.

This procedure outlines the steps all individuals working with radiation producing devices or radioactive materials must complete in order to meet DOE and Ames Laboratory training requirements.

3.1. Definitions

General Employee Radiological Training (GERT) (ALAB-GERT-CL): This course is provided to all site employees who receive occupational exposure during access to controlled areas (as defined in 10 CFR 835.2(a)) who are permitted unescorted access to controlled areas. These individuals may routinely enter controlled areas and encounter radiological barriers, postings, radiation producing devices or radioactive materials. Employee responsibilities for observing and obeying radiological postings and procedures are emphasized throughout this training. This course has a two year retrain requirement.

Radiation Producing Device User Initial Training (ALAB-RWIIINITIAL-CL): Employees are required to have a one-on-one meeting with a member of the ESH&A radiological or environmental program in order to familiarize themselves with information about safe use of radiation producing devices and proper use of a ring dosimeter. During this one-on-one meeting the trainer will complete paperwork necessary to order the employee's ring dosimeter. After the one-on-one session, employees will log into Learn@ISU to download the Radiation Producing Device User study guide and complete the RWII Radiation Producing Device challenge exam.

Radiation Producing Device User Refresher Training (ALAB-RWIIRETRAIN-CL): Employees working with radiation producing devices are required to participate in refresher training every two years. This course is taught in a large-group classroom format and covers information related to survey requirements, radiation instrumentation, pre-operational checks, conducting surveys, and properly documenting results. Classroom topics covered are tailored to class participant needs, i.e. a radioactive material user or radiation producing device user. After completion of the classroom session, employees will log into Learn@ISU to download the Radiation Producing Device User study guide and complete the RWII Radiation Producing Device challenge exam.

Radioactive Materials User Initial Training (ALAB-RWIIPRACFACINIT-CL): Employees are required to have a one-on-one meeting with a member of the ESH&A radiological or environmental program in order to familiarize themselves with information about safe use of radioactive materials and proper use of a badge dosimeter. After the one-on-one session, employees will log into Learn@ISU to download the Radiation Safety Study Guide for Users of Radioactive Material study guide and complete the RWII Radioactive Materials challenge exam.

Radioactive Materials User Refresher Training (ALAB-RWIIPRACFACRET-CL): Employees working with radioactive materials are required to participate in refresher training every two years. This course is taught in a large-group classroom format and covers information related to donning and doffing personal protective equipment; gloves, masks, respirators, gowns, Tyvek suits, etc. Classroom topics also include radiation hazard zoning, contamination control, access control, posting requirements, radiation instrumentation, pre-operational checks, conducting surveys, frisk surveys, and the proper documentation of results. After taking the classroom session, employees will log into Learn@ISU to download the Radiation Safety Study Guide for Users of Radioactive Material study guide and complete the RWII Radioactive Materials challenge exam.

Sealed Source User Training (EHS-RAD-SSCS-2015-ON): This course will be assigned to individuals who will be working with sealed radioactive source(s) as defined in 10 CFR 835.2(a). *Sealed radioactive source* means a radioactive source manufactured, obtained, or retained for the purpose of utilizing the emitted radiation. The sealed radioactive source consists of a known or estimated quantity of radioactive material contained within a sealed capsule, sealed between layer(s) of non-radioactive material, or firmly fixed to a non-radioactive surface by electroplating or other means intended to prevent leakage or escape of the radioactive material. Sealed radioactive sources do not include reactor fuel elements, nuclear explosive devices, and radioisotope thermoelectric generators. It is an online course that will cover safe handling of sealed sources and can be accessed through Learn@ISU.

4.0 ROLES AND RESPONSIBILITIES

4.1. Group Leader

It is the responsibility of the Group Leader to complete the New Employees Planned Activity form at the time of hiring. Group Leaders are required to identify all laboratory activities an individual will be participating in during their time at the Laboratory, including work with radiation producing devices or radioactive materials. Group Leaders are responsible for ensuring all of their employees are completing their required training in a timely manner. Finally, Group Leaders are responsible for notifying the Training Office if their employee's training requirements have changed.

4.2. Employee

The Ames Laboratory employee is responsible for completing all necessary training as it is assigned in their Learn@ISU training profile prior to performing work. The employee is responsible for ensuring they are using their dosimeter correctly and following all rules and regulations as outlined by the Ames Laboratory Radiation Protection Program plan and Radiation Safety Officer (RSO). The employee is also responsible for communicating with their Group Leader if they perceive their work has changed and they may need to add or remove training requirements.

4.3. Training Office

The Training Office is responsible for inputting all training requirements into employee training profiles in Learn@ISU as well as sending monthly training reminders to Ames Laboratory Group Leaders.

4.4. Radiation Safety Officer (RSO)

The Ames Laboratory radiological safety organization is independent of the line organizational elements responsible for radiological operations at the site. Radiological safety personnel are directed by and accountable to the Radiation Safety Officer (RSO) who reports to the ESH&A Manager. The RSO has authority to develop radiological safety policies and procedures, assign radiological safety personnel to support line organizations, and oversee implementation of the radiological safety program across the site. The RSO also reports to the ALARA Committee Chair of Ames Laboratory, and as necessary to the Safety Review Committee. The RSO is responsible for:

- Implementing a viable radiological protection program;
- Preparing and maintaining the RPP;
- Preparing and Maintaining the RSPD;
- Ensuring that health physics personnel performing radiological work activities are appropriately trained; and
- Providing health physics support to the Ames Laboratory mission.

5.0 PREREQUISITE ACTIONS AND REQUIREMENTS

Using the New Employee Planned Activities form, a Group Leader must identify that a new employee will be using a radiation producing device or will be working with radioactive materials. This information is provided to the Training Office and the appropriate courses are added to a new employees Learn@ISU training profile. Only individuals who will be working directly with radiation producing devices or radioactive material during the course of their work at the Laboratory will be assigned these courses. Individuals who may need to be aware of radiation to remain safe in the course of their jobs are encouraged to take GERT.

6.0 RADIATION PRODUCING DEVICE USER TRAINING SERIES

Listed below is a step-by-step guide to completing the radiation producing device initial training:

1. Log-in to Learn@ISU using your Iowa State University Net-Id and password.
2. Under “My Menu” select “My Requirements”.
3. On the “My Requirements” page select “List Events” for Radiation Producing Device User Initial training.
4. Choose a date for a one-on-one course with ESH&A radiological or environmental staff.
5. A confirmation e-mail will be sent to remind you of your appointment date and will also include two forms that will need to be completed and brought to the one-on-one session as well as a link to the Radiation Producing Device User study guide.
6. Attend your one-on-one session with ESH&A radiological or environmental staff. During this meeting the RSO will cover safety information, order your ring dosimeter and give you information about when your dosimeter will be available for pick-up in the ESH&A Office located in G40 TASF.
7. Immediately following your one-on-one session, bring your certificate of completion to the Training and Documents Office, 105 TASF.
8. Log-in to Learn@ISU to complete your challenge exam.
9. Once you have passed your challenge exam you will receive credit for the entire series and be an authorized user of radiation producing devices at Ames Laboratory.

Once you have completed the initial training, you are required to retrain on this topic every two years. Listed below is a step-by-step guide to completing the radiation producing device user refresher training:

1. Log-in to Learn@ISU using your Iowa State University Net-Id and password.
2. Under "My Menu" select "My Requirements".
3. On the "My Requirements" page select "List Events" for Radiation Producing Device User Refresher training.
4. A confirmation e-mail will be sent to remind you of your classroom session date and will also include a link to the Radiation Producing Device User study guide.
5. Attend the classroom session and provide your name and employee number on the sign-in sheet to receive credit.
6. Log-in to Learn@ISU to complete your challenge exam.
7. Once you have passed your challenge exam you will receive credit for the entire series and maintain your "user of radiation producing devices" status with Ames Laboratory.

7.0 RADIOACTIVE MATERIALS USER TRAINING SERIES

Listed below is a step-by-step guide to completing the radioactive materials user initial training:

1. Log-in to Learn@ISU using your Iowa State University Net-Id and password.
2. Under "My Menu" select "My Requirements".
3. On the "My Requirements" page select "List Events" for R Initial training.
4. Choose a date for a one-on-one course with ESH&A radiological or environmental staff.
5. A confirmation e-mail will be sent to remind you of your appointment date and will also include two forms that will need to be completed and brought to the one-on-one session as well as a link to the Radiation Safety Study Guide for Users of Radioactive Material.
6. Attend your one-on-one session with ESH&A radiological or environmental staff. During this meeting the RSO will cover safety information, order your badge dosimeter and give you information about when your dosimeter will be available for pick-up in the ESH&A Office located in G40 TASF.
7. Immediately following your one-on-one session, bring your certificate of completion to the Training and Documents Office, 105 TASF.
8. Log-in to Learn@ISU to complete your challenge exam.
9. Once you have passed your challenge exam you will receive credit for the entire series and be an authorized user of radioactive materials at Ames Laboratory.

Once you have completed the initial training, you are required to retrain on this topic every two years. Listed below is a step-by-step guide to completing the radioactive materials user refresher series:

1. Log-in to Learn@ISU using your Iowa State University Net-Id and password.
2. Under "My Menu" select "My Requirements".
3. On the "My Requirements" page select "List Events" for Radiation Producing Device User Refresher training.
4. A confirmation e-mail will be sent to remind you of your classroom session date and will also include a link to the Radiation Safety Study Guide for Users of Radioactive Material.
5. Attend the classroom session and provide your name and employee number on the sign-in sheet to receive credit.
6. Log-in to Learn@ISU to complete your challenge exam.
7. Once you have passed your challenge exam you will receive credit for the entire series and maintain your "user of radioactive materials" status with Ames Laboratory.